

Remarks

Claims 19, 23-25, 28, 32, 33 and 35 have been amended. No claims have been canceled. Therefore, claims 19-37 are now presented for examination.

Claims 19-21, 25-30 and 35-36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Klein (U.S. Patent No. 6,567,864) and Jones et al. (U.S. Patent No. 5,619,723) and Thompson et al. (U.S. Patent No. 6,341,342) and further in view of Klein et al (U.S. Patent No. 5,671,439). Applicant submits that the present claims are patentable over any combination of Klein ('864), Jones, Thompson, and Klein ('439).

Klein ('864) discloses a computer system in which a table created in memory includes drive description data for one or more IDE devices included in the system. The computer system includes a command intercept circuit is described, which intercepts device-identification commands and reroutes the device-identification operation to memory. The command intercept circuit includes an address decode circuit which asserts a first control signal upon decoding an address corresponding with the one or more IDE devices. A command decode circuit responds to the asserted first control signal to decode data and asserts a second control signal when the decoded data corresponds with a device-identification command. An address generator responds to the asserted second control signal to generate a memory address where the drive description data table is stored. See Klein at Abstract. However, Klein ('864) does not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives.

Jones discloses a disk drive array controller. The controller includes a microcontroller CPU with embedded ROM and RAM, a bus interface, and five connected disk drives. The ROM 104 contains the firmware for controller. A system bus coupled to the bus interface provides a communication link between the controller and a host computer, which uses the array of disk drives as secondary memory. See Jones at col. 14,

11. 18-27. Nonetheless, Jones does not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives.

Thompson discloses an array controller that cleans buffer memory as a background task. The controller includes a transfer buffer, a memory that stores an index or table indicating free and non-zero data sectors within the transfer buffer, and processing logic that uses the transfer buffer for data transfer operations, and when otherwise idle, that scans the index table for contiguous sections of free and non-zero data sectors of the transfer buffer and that zeroes at least one of the contiguous sections. See Thompson at Abstract. Nevertheless, Thompson does not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives.

Klein ('439) discloses means for alternately transferring even-numbered blocks of physical sectors between a on-board memory of a first drive and a main processing system and transferring odd-numbered blocks of physical sectors between the on-board memory of a second drive and the main processing system. See Klein ('439) col. 4, ll. 36-41. However, Klein ('439) does not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives.

Claim 19 of the present application recites that data written to and read from first and second disk drives is interleaved by mapping bits of a system request to first and second disk drives so that even sectors are accessed on the first disk drive and odd sectors are accessed on the second disk drive. As discussed above, none of the cited references disclose or suggest such a feature. In particular, nowhere in Klein ('439) is there disclosed or suggested a process of mapping bits of a system request to first and second disk drives so that even sectors are accessed on the first disk drive and odd sectors are accessed on the second disk drive. Instead, Klein ('439) discloses alternately transferring even-numbered blocks of physical sectors between the on-board memory of the first drive and the main processing system and transferring odd-numbered blocks of physical sectors

between the on-board memory of the second drive and the main processing system. Thus, there is no disclosure of mapping bits of a system request to first and second disk drives.

Similarly, Klein ('864), Jones, and Thompson also fail to disclose or suggest data written to and read from a first and second disk drives is interleaved mapping bits of a system request to first and second disk drives so that even sectors are accessed on a first disk drive and odd sectors are accessed on a second disk drive. Since none of the cited references disclose or suggest such a feature, any combination of Klein ('439), Klein ('864), Jones, and Thompson would not disclose or suggest the feature. Therefore, claim 19 is patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439).

Claims 20-24 depend on claim 19 and contain additional features, therefore claims 20-24 are also patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439).

Claim 25 recites writing to and reading from a first disk drive and a second disk drive in an interleaved form by mapping of bits of a system request to the first and second disk drives even sectors on the first drive are accessed and odd sectors on the second drive are accessed. Thus, for reasons described above with respect to claim 19, claim 25 is also patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439). Since claims 26 and 27 depend on claim 25 and contain additional features, claims 26 and 27 are also patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439).

Claim 28 recites that data written to and read from a first and second disk drives is interleaved by mapping bits of a system request to first and second disk drives so that even sectors are accessed on the first disk drive and odd sectors are accessed on the second disk drive. Thus, for reasons described above with respect to claim 19, claim 28 is also patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439). Since claims 29-34 depend on claim 28 and contain additional features, claims

29-34 are also patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439).

Claim 35 discloses that data written to and read from a first and second disk drives is interleaved by mapping bits of a system request to first and second disk drives so that even sectors are accessed on the first disk drive and odd sectors are accessed on the second disk drive. Thus, for reasons described above with respect to claim 19, claim 35 is also patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439). Since claims 36 and 37 depend on claim 35 and contain additional features, claims 36 and 37 are also patentable over Klein ('864), Jones, and Thompson in further view of Klein ('439).

Claims 22, 31 and 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Klein (U.S. Patent No. 6,567,864) and Jones et al. (U.S. Patent No. 5,619,723) and Thompson et al. (U.S. Patent No. 6,341,342) and Klein et al (U.S. Patent No. 5,671,439) and further in view of Anderson (U.S. Patent No. 5,905,910). Applicant submits that the present claims are patentable over any combination of Klein ('864), Jones, Thompson, Klein ('439), and Anderson.

Anderson discloses a process of data transfers alternating between a first disk drive and a second disk drive. See Anderson col. 12, ll. 18-20. However, Anderson does not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives.

As discussed above, Klein ('864), Jones, Thompson, and Klein ('439) do not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives. As a result, any combination of Klein ('864), Jones, Thompson, Klein ('439), and Anderson would also not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives. Therefore, the present claims are patentable over Klein ('864), Jones, Thompson, and Klein ('439) in further view of Anderson.

Claims 23, 24, 32 and 33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Klein (U.S. Patent No. 6,567,864) and Jones et al. (U.S. Patent No. 5,619,723) and Thompson et al. (U.S. Patent No. 6,341,342) and Klein et al (U.S. Patent No. 5,671,439) and further in view of Jenkins (U.S. Patent No. 4,047,157). Applicant submits that the present claims are patentable over any combination of Klein ('864), Jones, Thompson, Klein ('439), and Jenkins.

Jenkins discloses that in a track/sector register, track address and sector address bit positions identify the track and sector on a disk to be involved in a transfer. In a fixed-head unit, the track address bits identify a specific head. See Jenkins col. 20, ll. 38-43. Jenkins further discloses that a write signal, produced in response to the function bits, enables drivers to load data onto the data set, which includes data wires and a data parity wire. See Jenkins col. 26, ll. 26-28. However, Jenkins does not disclose or suggest mapping bits of a single system request to two different physical drives.

As discussed above, Klein ('864), Jones, Thompson, and Klein ('439) do not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives. Thus, any combination of Klein ('864), Jones, Thompson, Klein ('439), and Jenkins would also not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives. Therefore, the present claims are patentable over Klein ('864), Jones, Thompson, and Klein ('439) in further view of Jenkins.

Claim 37 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Klein (U.S. Patent No. 6,567,864) and Jones et al. (U.S. Patent No. 5,619,723) and Thompson et al. (U.S. Patent No. 6,341,342) and Klein et al (U.S. Patent No. 5,671,439) and further in view of Mizuno et al. (U.S. Patent No. 5,608,891). Applicant submits that the present claims are patentable over any combination of Klein ('864), Jones, Thompson, Klein ('439), and Mizuno.

Mizuno discloses that the outputs of the FIFOs are input to five AND gates and then the five signals are exclusive-ORed. See Mizuno col. 17, ll. 8-9. However, Mizuno does not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives.

As discussed above, Klein ('864), Jones, Thompson, and Klein ('439) does not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives. Accordingly, any combination of Klein ('864), Jones, Thompson, Klein ('439), and Mizuno would also not disclose or suggest interleaving disk drives by mapping bits of a system request to first and second disk drives. Therefore, the present claims are patentable over Klein ('864), Jones, Thompson, and Klein ('439) in further view of Mizuno.

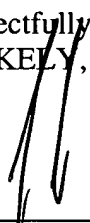
Applicant submits that the rejections have been overcome, and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,
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